

Mumbai University

Question Paper

October – 2017

[B.Sc.IT – SEMESTER: VI]
(CBSSGS – 75:25 PATTERN)

- ❖ **INTERNET TECHNOLOGIES**
- ❖ **IPR AND CYBER LAWS**
- ❖ **PROJECT MANAGEMENT**
- ❖ **GEOGRAPHIC INFORMATION SYSTEMS**

KAMAL T UNIVERSE

Mumbai University

Question Paper

**[CBSGS – 75:25 PATTERN]
(OCTOBER – 2017)**

PAPER - I

**INTERNET
TECHNOLOGIES**

Time: 2 ½ Hours**Total Marks:** 75**N.B.:** (1) All Question are Compulsory.

(2) Make Suitable Assumptions Wherever Necessary And State The Assumptions Made.

(3) Answer To The Same Question Must Be Written Together.

(4) Number To The Right Indicates Marks.

(5) Draw Neat Labeled Diagrams Wherever Necessary.

(6) Use of Non – Programmable Calculator is allowed.

Q.1 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What are the special addresses used in IPv4? (5)
- (B) How is IPv4 implemented over ATM Networks? Explain. (5)
- (C) Compare IPv4 Protocol and IPv6 Protocol with respect to their Headers. (5)
- (D) How is the address space allocated for IP6 Addresses? (5)

Q.2 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain the Distance Vector Algorithm used in Routing Information Protocol. (5)
- (B) Explain the phases for Mobile IP Communication. (5)
- (C) Explain the Error Reporting Messages in ICMP. (5)
- (D) Write a note on ATMARF. (5)

Q.3 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain the Server State Transition diagram for TCP. (5)
- (B) Explain the TCP Timers. (5)
- (C) State and explain the UDP Services. (5)
- (D) Explain the UDP Applications with respect to Connection, Error Control with examples. (5)

Q.4 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain the DHCP Client Transition diagram. (5)
- (B) Explain Recursive Resolution and Iterative Resolution used in Domain Name Service. (5)
- (C) Explain the Services provided by Stream Control Transmission Protocol. (5)
- (D) How does Stream Control Transmission Protocol manage Flow Control? (5)

Q.5 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain the Data Formatting Commands and the Port Defining Commands in FTP. (5)
- (B) Explain the following terms: (5)
- (i) Dynamic Document
 - (ii) Static Document
 - (iii) Hypertext
 - (iv) Hypermedia
 - (v) Uniform Resource Locator
- (C) Write a note on HTTP. (5)
- (D) State and explain the different TFTP Messages. (5)

[TURN OVER]

Q.6 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What is Simple Mail Transfer Protocol? Explain the scenario where both the sender and receiver are connected to the web servers via LAN or WAN. (5)
- (B) Explain POP3 and IMAP4. (5)
- (C) Explain the four approaches to streaming stored audio/video. (5)
- (D) Write a note on Real-Time Transport Control Protocol. (5)

Q.7 ATTEMPT ANY THREE QUESTIONS: (15 MARKS)

- (A) Explain the functions of the user support layers of the OSI Model. (5)
- (B) Explain the Link State Routing used in Open Shortest Path First Protocol. (5)
- (C) How does TCP Handle Congestion? (5)
- (D) Explain the following used in Domain Name Service: (5)
- (i) *Partially Qualified Domain Name*
 - (ii) *Label*
 - (iii) *Zone*
 - (iv) *Root Server*
 - (v) *Primary Server*
- (E) State and explain the different kinds of messages used in Border Gateway Protocol. (5)
- (F) Write note on MIME. (5)
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**[CBSGS – 75:25 PATTERN]
(OCTOBER – 2017)**

PAPER - IV

ELECTIVE

**IPR AND
CYBER LAWS**

Time: 2 ½ Hours**Total Marks:** 75**N.B.:** (1) All Question are Compulsory.

(2) Make Suitable Assumptions Wherever Necessary And State The Assumptions Made.

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(5) Draw Neat Labeled Diagrams Wherever Necessary.

(6) Use of Non – Programmable Calculator is allowed.

Q.1 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What is Copyright? What can be protected under Copyrights? (5)
- (B) Write Steps to Register Patent In UK. (5)
- (C) What do you understand by Design Rights? Explain in short. (5)
- (D) Write a short note on Unfair Competition of Intellectual Property. (5)

Q.2 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Write the Data Protection Principles. (5)
- (B) Explain the Semiconductor Chip Protection Act of 1984. (5)
- (C) Write the disputes under intellectual Property Rights. (5)
- (D) Write a short note on TRIPS Agreement. (5)

Q.3 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What are the rights of Patentee? Explain. (5)
- (B) Define the terms Assignee, Assignor. Discuss different types of assignment. (5)
- (C) What do you mean by Infringement of Patent? Explain. (5)
- (D) Write defences of Trademark. (5)

Q.4 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Write any five Civil Remedies in enforcement of IPR. (5)
- (B) Write the advantage of Licensing. (5)
- (C) What is the objective of IPR? Write the principles of IPR. (5)
- (D) List and explain different categories of Licensing Agreement. (5)

Q.5 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) List out various domain related issues. (5)
- (B) Write the different roles of Certifying Authorities. (5)
- (C) Explain the scopes of Cyber Laws. (5)
- (D) What is the purpose of Cryptography in Digital Signature? Explain. (5)

Q.6 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What does a Certifying Authority certify, while issuing the Digital Signature Certificate? (5)
- (B) Write the functions of controller of Certifying Authorities? (5)
- (C) What does chapter 3 of IT Act, 2000, "Electronic Governance" stress upon? (5)
- (D) What are the duties of the subscriber of Digital Signature Certificate? (5)

[TURN OVER]

Q.7 ATTEMPT ANY THREE QUESTIONS: (15 MARKS)

- (A) Write a short note on Trademark. (5)
 - (B) Discuss Domain Name as Intellectual Property. (5)
 - (C) Write steps to Register a Design. (5)
 - (D) What are the Criminal Remedies for Copyright Violation? Explain. (5)
 - (E) Explain verification process of Digital Signature. (5)
 - (F) What kind of documents are not covered under IT Act, 2000? (5)
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PAPER - IV

ELECTIVE

**PROJECT
MANAGEMENT**

Time: 2 ½ Hours**Total Marks:** 75**N.B.:** (1) All Question are Compulsory.

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(5) Draw Neat Labeled Diagrams Wherever Necessary.

(6) Use of Non – Programmable Calculator is allowed.

Q.1 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain how software product size can be reduced. Also discuss how it contributes to the improvement of Software Economics? (5)
- (B) What are the best practices to be followed for improving the overall quality of software? (5)
- (C) Explain five symptoms of a project that is headed for trouble. (5)
- (D) Explain the three generations of Software Economics. (5)

Q.2 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What are the Primary Objectives during engineering stage of a Modern Software Development Process? (5)
- (B) Explain the top five principles of Modern Management. (5)
- (C) What is an Artifact? What are the two forms of requirements addressed in release specification? (5)
- (D) Explain the importance of Software Architecture. State the three different aspects of Software Architecture from management perspective. (5)

Q.3 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) List the purpose of milestones in the Project Life Cycle. State the three types of Joint Management Review. (5)
- (B) Explain Forward and Backward-Looking approach of cost and schedule estimating process. (5)
- (C) What is the significance of Periodic Status Assessments? Explain the Default Content of Status Assessment Reviews. (5)
- (D) Explain the concept of Workflow? Describe Major Workflows involved in Software Development. (5)

Q.4 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Why an independent team is used for software assessment? Explain the activities of software assessment team over the Project Life Cycle. (5)
- (B) Explain the automation aids and tool components that support the process workflows. (5)
- (C) What are the main features of default Line-Of-Business Organization? What are the typical components of the organizational infrastructure? (5)
- (D) What is Software Change Order? What are the primitive components of a Software Change Order? (5)

Q.5 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What are the characteristics of Modern Iterative Development Framework? What are the steps to follow to transition to a mature iterative development process? (5)
- (B) Give an account of next-generation software cost estimation models. (5)
- (C) Discuss nine best practices of Software Management. (5)
- (D) With the help of diagram explain risk profile of a modern project across its Life Cycle. (5)

[TURN OVER]

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- (D) With the help of diagram explain risk profile of a modern project across its Life Cycle. (5)

Q.7 ATTEMPT ANY THREE QUESTIONS: (15 MARKS)

- (A) With the help of diagram explain Predominant Cost Estimation process. What are the characteristics of a good estimate? (5)
- (B) Write short note on implementation and Deployment Set. (5)
- (C) Define WBS. Write short note on evolutionary WBS. (5)
- (D) Write short note on Organization Policy. (5)
- (E) Define the following terms: (5)
- (i) *Adaptability*
 - (ii) *Breakage*
 - (iii) *Rework*
 - (iv) *Maturity*
 - (v) *Stability*
- (F) Explain any five indicators of a successful transition to a modern culture focused an improved software business performance. (5)
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ELECTIVE

**GEOGRAPHIC
INFORMATION
SYSTEM**

Time: 2 ½ Hours

Total Marks: 75

N.B.: (1) All Question are Compulsory.

(2) Make Suitable Assumptions Wherever Necessary And State The Assumptions Made.

(3) Answer To The Same Question Must Be Written Together.

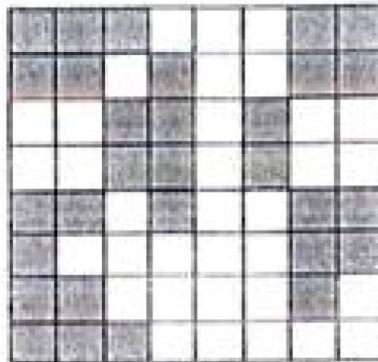
(4) Number To The Right Indicates Marks.

(5) Draw Neat Labeled Diagrams Wherever Necessary.

(6) Use of Non – Programmable Calculator is allowed.

Q.1 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Write a short note on TIN Model. (5)
- (B) Explain spatial reference information of Raster Data. (5)
- (C) Draw Quad Tree for the following: (5)



Also, code the spatial index of the shaded feature.

- (D) What are the different types of projections based on preserved by property? (5)

Q.2 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain with example the Neutral Format Data Exchange. (5)
- (B) Explain different types of Field Data. (5)
- (C) Explain Affine Transformation. (5)
- (D) List the common resampling methods and explain them. (5)

Q.3 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain the join and relate operations of tables in Relational Database. (5)
- (B) List the types of Attribute Data based on Measurement Scale. Explain. (5)
- (C) List different types of database design. Explain any two. (5)
- (D) Define the following terms: (5)
- (i) Chart Map
 - (ii) Primary Key
 - (iii) Numeric Data
 - (iv) Feature Attribute Table
 - (v) Interval Data

[TURN OVER]

Q.4 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Describe brushing as technique for Data Exploration. (5)
- (B) Explain feature selection by Spatial Relationship Data Query with suitable example. (5)
- (C) Explain with suitable example Spatial Data Query. (5)
- (D) What is the output of the following for a statement (NOT(slope = 1) AND (NOT(Aspect = 2))) (5)

| Aspect | | | | | | | | Slope | | | | | | | |
|--------|---|---|---|---|---|---|---|-------|---|---|---|---|---|---|---|
| 4 | 1 | 4 | 1 | 2 | 3 | 1 | 2 | 1 | 1 | 1 | 3 | 4 | 2 | 3 | 3 |
| 4 | 1 | 3 | 2 | 3 | 2 | 2 | 4 | 3 | 2 | 1 | 3 | 4 | 4 | 1 | 4 |
| 3 | 2 | 4 | 4 | 4 | 3 | 4 | 3 | 3 | 2 | 2 | 1 | 2 | 3 | 2 | 3 |
| 3 | 3 | 1 | 2 | 1 | 2 | 1 | 3 | 4 | 3 | 3 | 2 | 3 | 4 | 4 | 4 |
| 2 | 4 | 2 | 3 | 2 | 1 | 2 | 2 | 3 | 4 | 4 | 3 | 4 | 2 | 3 | 2 |
| 1 | 2 | 3 | 1 | 3 | 4 | 3 | 3 | 2 | 2 | 1 | 2 | 4 | 1 | 2 | 4 |
| 3 | 3 | 1 | 3 | 4 | 3 | 4 | 4 | 2 | 1 | 3 | 3 | 4 | 4 | 1 | 1 |
| 4 | 4 | 2 | 2 | 4 | 4 | 2 | 1 | 1 | 3 | 3 | 2 | 2 | 3 | 4 | 1 |

Q.5 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What is the Physical Distance Measure Operation? (5)
- (B) Write the purpose of the following map manipulation operations with example: (5)
- Erase
 - Update
 - Select
 - Eliminate
 - Clip
- (C) What are the applications of overlay? (5)
- (D) Explain Spatial Autocorrelation with example. (5)

Q.6 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain the Thin-Plate Splines Local Method. (5)
- (B) Explain the use of bringing process used in kriging? (5)
- (C) Explain the Inverse Distance Weighted Interpolation Local Method. (5)
- (D) Explain the Thiessen Polygons Local method. (5)

Q.7 ATTEMPT ANY THREE QUESTIONS: (15 MARKS)

- (A) Explain the Thin-Plate Splines Local Method. (5)
- (B) Explain the use of bringing process used in kriging? (5)
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